IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Baggett et al.	Art Unit	: 2166
Serial No.	: 09/431,366	Examiner	: Khanh Pham
Filed	: November 1, 1999	Conf. No.	: 8583
Title	: METHOD AND APPARATUS FOR PROVIDING AVAILABILITY OF AIRLINE SEATS		

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REQUEST FOR RECONSIDERATION OF THE
DECISION ON APPEAL DATED SEPTEMBER 26, 2008

Sirs:

Appellant respectfully requests reconsideration of the Board of Patent Appeals and Interferences Decision on Appeal dated September 26, 2008, under 37 CFR 41.50(b) (2). Appellant believes the Board misapprehended or overlooked the following points in rendering their decision.

I. Appellant's invention

Appellant conceived of novel techniques to manage a cache including entries corresponding to seat availability information. The techniques include proactively determining if a stored answer in the cache is stale based on a criterion for seat availability information. The criterion is determined based on needs of a travel planning system that makes queries to the cache for obtaining the seat availability information. Appellant describes:

> **The cache manager 150 provides additional processing in order to keep the highest quality information in the cache 15 so that the query responses are as useful as possible. The cache manager 150 can operate when availability queries to the cache 152 are not being made or are not pending, or can operate continually ("in the background" or "as a daemon") independent of the availability queries posed to the cache 152. The cache manager 150 implements a management strategy that is dependant on the availability queries being posed to the cache 152.**[1]

[1] Appellant's specification at page 12, lines 24-32.

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The travel planning system makes availability queries to gather data to determine whether in fact seats are available on various combinations of flight segments. Since availability data is expected to change slowly relative to query rates and since live availability queries to the airlines is often costly in both time and money, a cache is inserted between the travel planning system and the source of availability data. Furthermore, "a cache manager 150 is inserted between the availability cache 152 and the source 20c of availability data, to proactively populate the cache 152 to maintain a high quality level of data in the cache 152 for quick and easy access by the travel planning system 10."[2]

The claimed techniques address the potential problem of stored answers pertaining to seat availability information becoming stale, "In addition, the answer can include a confidence factor based on whether the query is stale or whether an actual query was performed."[3] In addressing such problems, the techniques include sending an availability query to a source of seat availability information based on determining that the answer was stale.

> **The cache manager 150 determines what entries are to be kept in the cache, and submits appropriate "Requests" to the availability source 20c at the appropriate time to obtain the "Responses" that are stored in the cache 152 … Further, the cache manager 150 might decide that a query should be submitted to the source to gather fresh data about the entry "DL1823 04NOV BOS-LGA 7:30" and either update that entry in the cache or add it if not already present.[4]**

These techniques make it possible to perform large scale or low fare searches that have access to availability information flights and available booking codes in a low cost manner. This in turn provides a travel planning system that can look at many possible flight and return to a traveler flight combinations for which seats are in fact available.

II. The Board improperly applied the "intended use" doctrine

The Board improperly applied the "intended use" doctrine when characterizing the feature of claim 19 that recites "managing a cache for predicting availability information" as

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[2] Appellant's specification at page 12, line 23 to page 13, line 10.
[3] Appellant's specification at page 11, line 32 to page 12, line 21.
[4] Appellant's specification at page 14, lines 8-19.

being **"merely an intended use in the preamble of the claim, and cannot be given patentable weight. See *In re Burke* (cited above)."**[5] The Board has misapprehended *In re Burke* in support of its conclusion. In particular, the Board points the decision of *In re Burke* that states "While the preamble is not normally considered part of the claim, it is deemed part of the claims where necessary to breathe 'life and meaning' into the claims."[6]

The claimed feature of "managing the cache for predicting availability information" indeed breaths life and meaning into claim 19, as the subsequent features of the claim describe how this feature is accomplished. Therefore, this feature is not an intended use, but rather a structural and functional limitation applied to the cache in that the feature specifies that the cache is one that predicts availability information and not just any cache. Such a limiting feature has long been recognized to be entitled to patentable weight and consideration. See for instance, *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.,* 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989).[7] As explained earlier by Appellant, the mechanism employed by the cache is a way of predicting what an answer to an availability query would be if a live availability query were sent to an airline's availability system.[8] Furthermore, the features in which a computer is caused to "proactively determine whether a stored answer in the cache is stale …. and update the stored answer in the cache" are performed within the claimed context of predicting availability information. Thus, this feature cannot be considered an intended use because it defines the framework for the claim as a whole,[9] and is therefore entitled to patentable weight.

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[5] BPAI Decision at page 15.
[6] BPAI Decision at page 8.
[7] Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation. The determination of whether preamble recitations are structural limitations can be resolved only on review of the entirety of the application "to gain an understanding of what the inventors actually invented and intended to encompass by the claim."; *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); MPEP §2111.02.
[8] Reply Brief at page 10, paragraph 3.
[9] "[A] claim preamble has the import that the claim as a whole suggests for it." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999).

Appellant notes that the "predicting" in claim 19 is directed to predicting availability information, whereas Lynch is directed to determining "when to update" information in the database with an assumption that the information is stale. Thus, Lynch is not directed to the subject matter of claim 19.[10]

The Board has improperly applied the "intended use" doctrine when characterizing the "list of keys" recited in claims 3 and 20 as being **"non-functional"** and therefore not having **"patentable weight."**[11] This feature is not an intended use but rather, a structural and functional limitation that qualifies the feature of determining whether a stored answer in the cache is stale. Such a limiting feature has long been recognized to be entitled to patentable weight and consideration.[12] The lists of keys cannot be considered an intended use because the lists provide antecedent basis for other features of claim 1.[13] For example, the list of keys directly influences the submitting and storing processes of the claim, which are performed "for each key on the list in the order given." Thus, the list of keys is indeed entitled to patentable weight.

Appellant notes that characterizations of intended use are generally applied to the preamble of a claim.[14] Here, however, the Board has mischaracterized features found in the body of the claim as an intended use when indeed these features provide structural and functional limitations to the claim.

With respect to the scheduling feature of claims 3 and 20, the Board contends that Mehovic at col. 3, line 63, teaches **"a data set being updated based on the TPF or a set period [sic] of time."**[15] This passage is reproduced below for reference.

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[10] Reply Brief at page 10, paragraph 4.
[11] BPAI Decision at page 20.
[12] Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation. The determination of whether preamble recitations are structural limitations can be resolved only on review of the entirety of the application "to gain an understanding of what the inventors actually invented and intended to encompass by the claim."; *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); MPEP §2111.02.
[13] When the limitations in the body of the claim "rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1339 (Fed.Cir.2003).
[14] The preamble of a claim does not limit the scope of the claim when it merely states a purpose or intended use of the invention. However, terms appearing in a preamble may be deemed limitations of a claim when they "give meaning to the claim and properly define the invention." *In re Paulsen*, 30 F.3d 1475, 1479 (Fed.Cir.1994).
[15] BPAI Decision at page 20.

> The process comprises … steps for data propagation that occur immediately after the TPF based CRS 12 updates the data or at definable intervals of time, in which case data updates are saved in a log until the next propagation event.[16]

With all due respect, it is not clear to Appellant how the above passage in any way teaches the claimed feature of "scheduling a list of keys where the list of keys are identifiers of specific instances of transportation to update or add, and for each key on the list in the order given, submitting a query to the availability source; and … updating an entry if present and adding an entry if not present in the cache." Rather, the above passage of Mehovic describes periodically updating data in a CRS, which has no relevance to the combination of features of claim 3, which determines if stored answers in the cache are stale in a completely different manner than the updating described in Mehovic.

The Board has also improperly applied the "intended use" doctrine to the feature of "the travel planning system" recited in claims 5, 7-11, and 23-26. Specifically, the Board states that "as that limitation is in the preamble alone, we cannot give it patentable weight …"[17]

The Board's statement is simply incorrect. In addition to the preamble, the "travel planning system" is recited in the body of claim 5, specifically in the feature that recites "with the quality level … determined by evaluating entries in the cache according to a criterion related to needs of a travel planning system …" This feature is not an intended use but rather a structural and functional limitation that qualifies the feature of determining the quality level of the seat availability information in the cache. Such a limiting feature has long been recognized to be entitled to patentable weight and consideration.[18] Appellant stands by previous argument that no combination of Mehovic with Filepp suggests an availability system for use with a travel planning system.[19]

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[16] Mehovic at col. 3, lines 61-65.
[17] BPAI Decision at page 20.
[18] Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation. The determination of whether preamble recitations are structural limitations can be resolved only on review of the entirety of the application "to gain an understanding of what the inventors actually invented and intended to encompass by the claim."; *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); MPEP §2111.02.
[19] Appeal Brief at page 34.

III. The Board's misapprehended the references

Claim 1

With respect to claim 1, the Board misapprehends Lynch in concluding that: **"Lynch [includes] various references to seat availability: "[t]he system obtains information, specifying the rates and/or availability …" (Col. 2,1. 1) … "…the system automatically retrieves the inventory and/or information from the database and determines the lowest-priced, available travel arrangements … "The customer reservation systems 24 provide travel service inventory information, such as airline, hotel, and rental automobile availability and rates." (Col. 3, l. 66) ..."**

There is no evidence in Lynch whatsoever that either the "availability of travel arrangements" or the inventory information that includes "flight availability and rates" indeed refers to seat availability, as recited in claim 1. For example, just because a flight may be available (i.e., the flight exists in the travel inventory of the customer reservations system), it does not necessarily follow that seats are will be made available on that flight to a particular passenger. For example, the flight could be fully booked but would still listed in the industry standard information. Additionally, as described by Appellant, the airline may choose not to make the flight available under a particular set of circumstances when the revenue management system that makes these decisions for the airline estimates that a more profitable passenger may seek the seat on the flight.

Appellant contends that because the Board did not explicitly identify where the claimed features of seat availability information were found or explain why "availability of travel arrangements" would necessarily include seat availability, in effect, reasoned that the features were somehow inherent in Lynch. However, to properly establish inherency, rationale or evidence tending to show inherency must be provided.

> To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

No such rationale or evidence was provided by either the Board or the Examiner. It necessarily follows, therefore, that the Board improperly ignored the features of the seat availability information. Having failed to point out how those features are necessarily present in the Lynch's inventory information, the Board cannot reason that somehow they are inherent in Lynch.

The Board states with regard to Lynch that **"Appellants next contend that the claimed determining if the stored answers in the cache are stale is no based on the needs of a travel planning system … but rather the updating is done strictly according to elapsed time (App. Br., 17, top)."** Appellant did not claim "updating" as argued by the board. Rather, claim 1 recites "proactively determining if a stored answer in the cache is stale …based on a criterion … determined based on the needs of a travel planning system … ." (Emphasis added). There is nothing in Lynch that discloses or suggests that updating is proactive. Rather, when updating the inventory information, Lynch's system simply accesses new information the computer reservation system automatically after a lapse of a predetermined time, regardless of whether or not any of the information already stored in the system is stale.

The Board has failed to show where Lynch explicitly teaches the feature "proactively determining if a stored answer in the cache is stale" or how the updating disclosed in Lynch necessarily performs this claimed feature. Again, the Board has in effect reasoned that the features of claim 1 are somehow inherent in Lynch without providing any evidence or rationale in support. Such reasoning is improper as a matter of law.[20]

Claim 5

With regard to claim 5, the Board reasons that: "**Appellants repeat the argument concerning seat availability not being taught by Lynch. We apply the same reasoning as applied to claim 1, and do not find error in the rejection.**" While Appellant contends that Lynch does not teach a cache including a plurality of entries of seat availability information for reasons presented for claim 1, the Board has overlooked other features of claim 5 that further distinguish claim 5 from Lynch and which differ from claim 1.

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[20] "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

For example, Lynch neither discloses nor suggests "proactively populating the cache … by evaluating entries in the cache according to a criterion related to needs of a travel planning system ..." Appellant maintains that "periodically updating the cache if a predetermined time has lapsed," as taught in Lynch, does not correspond to proactively populating the cache by evaluating entries according to a criterion. Nowhere does Lynch describe that updating the database involves evaluating the entries in the cache.

Rather, Lynch teaches updating automatically to replace old information in the database with new information accessed from computer reservations system at predetermined times. Nothing in Lynch however deals with evaluating the entries in the cache to see if those entries should be evaluated.

Claim 23

The Board misapprehends both Appellant's claim 23 and Walker (US Pub. 2005/0177402) in concluding that operations performed on the seat allocation database 245 in Walker are equivalent to Appellant's claimed feature of proactively populating the cache: **"the database 245 [of Walker] serves as the cache as claimed. The updating specified in the patent is read on the deletions and modifications to database 245, anticipating the limiatations of the claims. We note that the RMS serves as a source of updated information, but is not the cache itself …"**[21]

Contrary to the Board's assertions, claim 23 nowhere recites "updating the cache." Rather, claim 23 recites "proactively populating the cache by sending an availability query to a source of seat availability information." Walker nowhere discloses or suggests this feature of claim 23.

The seat allocation database 245 of Walker exists in both the RMS 200 and CRS 300[22], for example, as shown below in FIG. 2-3 of Walker.

[21] BPAI Decision at page 17.
[22] Walker at paragraph [0050] describes similar, but separate seat allocation databases stored within each of the CRS 300 and RMS 200, but uses the same identifier, i.e., 245, to refer to either database.

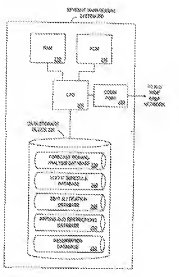

FIG. 2

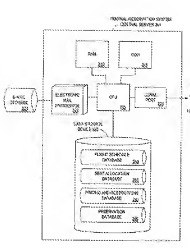

FIG. 3

It is unclear which allocation database 245 the Board considers to correspond to Appellant's claimed cache. The database 245 of the RMS 200 is described in Walker as the source of inventory information for each fare class on a given flight.[23] Thus, the database 245 of the RMS 200 cannot be construed as corresponding to the cache of claim 23, because the cache is a different entity from the source of seat availability information. Appellant therefore assumes that the Board construes the database 245 of the CRS 300 to correspond to the cache.

Even if the database 245 of the CRS 300 could be considered to correspond to Appellant's cache, which Appellant does not concede, Walker would still fail to teach instructions that cause a computer to "proactively populate the cache by sending an availability query to a source of seat availability information ..." The CRS 300 is nowhere disclosed or suggested to proactively populate its seat allocation database 245 by sending a query to the RMS 200, which the Board construes as a source of seat availability information.[24] Rather, the CRS 300 passively receives new data as it is provided by the CRS 300 via the Airline Reservation System (ARS) and ATP Co. 115:

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[23] Walker at paragraph [0061].

[24] Appellant does not concede that the RMS 200 is equivalent to Appellant's claimed source of seat availability information.

> **...the RMS 200 allocates inventory … sufficient to satisfy the expected demand …then stores the inventory allocated ... in the seat allocation database 245 … In step 1165, the RMS 200 transmits the inventory and fare/class for each filight … to the ARS 150 … [which] provides the scheduling, inventory and pricing information for each flight to the Airline Tarriff Publishing Company (ATP Co.) … Thereafter … the ATP Co. 115 sells this information to the central reservation system (CRS) 300 … [which] then creates records similar to those created by the RMS 200 .. in s the seat allocation database 245…**[25]

Furthermore, Walker nowhere discloses or suggests the deletions and modifications to the database 245 are performed by sending a query to a source of seat information, in this case the RMS 200. Therefore, these operations described in Walker do not teach the feature of claim 23 that recites "proactively populating the cache."

With respect to claims 1-3, 5-21, and 23-30, which are rejected under 35 U.S.C. 103(a) over Mehovic (US Pat. 6,122,642) and Filepp (US Pub. 2003/0167307), the Board acknowledges that **"Mehovic … does not teach proactively updating the cache …"**[26]

However, the Board misapprehends Filepp in concluding that the reference discloses this feature missing in Mehovic. In particular the Board cites Filepp at page 4, paragraph [0052] and other "omitted references" from the Examiner's Answer at page 10 as teaching **"an airline reservation system … utilizing cache storage wherein the objects in caches are proactively updated based on frequency of access to the objects in the caches."**[27] The passages at page 4, paragraph [0052] of Filepp describes a list of services provided by a network and does not mention either a cache or proactively updating a cache. The passage of Filepp at page 50, paragraph [0821], which is cited in the Examiner's Answer as allegedly teaching proactively updating the cache also does not teach this feature. This passage has been reproduced below for reference.

> **When objects are requested from object storage facility 439, only the latest version of the object will be provided to guarantee currency of information to the user. Object storage facility 439 assures currency by requesting version verification from network 10 for those objects which are available**

[25] Walker at paragraph [0071].
[26] BPAI Decision at page 18.
[27] BPAI Decision at page 18.

locally and by requesting objects which are not locally available from delivery system 20 where currency is maintained.[28]

According to Filepp therefore, the object storage facility 439 does not request version verification proactively, but rather in response to receiving a request for an object. Furthermore, the version verification request is neither disclosed nor suggested to include or initiate the updating of objects. Therefore, even if Mehovic and Filepp could be properly combined, which Appellant does not concede, their combination would still fail to disclose the entire combination of features recited in the claims.

With regard to claims 1 and 19, the Board misapprehends Mehovic in concluding that the well-known CRS Sabre is equivalent to Appellant's claimed cache, which includes entries corresponding to seat availability information: **"The Examiner argues that it is well known that Sabre is a CRS, and that as a Computerized Reservation System for the airlines the item that is being reserved is a seat on an airline flight."**[29] Nowhere in Mehovic is the CRS disclosed or suggested to be managed according to the features of claims 1 and 19.

Rather, the CRS is a traditional CRS, as described in the background of Appellant's specification. Confusingly, the Board subsequently cites the database 20 of Mehovic, which is coupled to the CRS, as corresponding to the Appellant's claimed cache. As the database 20 is nowhere disclosed or suggested to include the claimed feature of "entries that correspond to seat availability information," the Board misapplies *In re Gulack*, 703 F.2d 1385 (Fed. Cir. 1983) and *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994) as justification for completely ignoring this important feature of the claims.

In *Lowry*, the Federal Circuit specifically refused to apply the questionable, so called, "printed matter doctrine" to a data structure that was functionally related to its substrate, a memory, thus forcing the Board to consider all of the limitations including the data structure limitation when considering patentability of the claims. Here too, "seat availability data" is functionally related to the claimed method (i.e., the substrate) in that it controls the steps of the recited method. As the Federal Circuit found in *Lowry*, "Thus, *Lowry's* claims define functional

[28] Filepp at paragraph [0821].
[29] BPAI Decision page 19.

characteristics of the memory"[30], here the seat availability information defines functional characteristics of the claimed method. Thus, seat availability data is entitled to patentable weight. Furthermore, Mehovic does not teach managing a cache including entries that correspond to seat availability information for at least the reasons provided of record.[31]

IV. Conclusion

Reconsideration and reversal of the Board's September 26, 2008 decision is requested.

Alternatively, clarification of the basis of the Board's reasoning is requested in order for Appellant to consider its options for appeal to the Federal Circuit. For example, Appellant requests clarification regarding the Board's basis for applying the intended use doctrine; how the list of keys are found in Mehovic, and which allocation database 245 in Walker they consider to correspond to Appellant's claimed cache. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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[30] *Id.* 32 F.3d at 1583; 32 USf Q2d at 1034.
[31] Appeal Brief at page 26, and Reply Brief at page 13.